



**Doug
Garbarini/R2/USEPA/US**

10/08/2010 03:06 PM

To Douglas Fischer/R2/USEPA/US@EPA, Paul
Simon/R2/USEPA/US@EPA,

cc

bcc

Subject Fw: thoughts on coring program

----- Forwarded by Doug Garbarini/R2/USEPA/US on 10/08/2010 03:06 PM -----

From: Doug Garbarini/R2/USEPA/US
To: john.haggard@corporate.ge.com
Date: 10/08/2010 02:46 PM
Subject: Fw: thoughts on coring program

John

Hopefully things have improved in the field since we spoke on Wednesday . I heard your point about waiting for the PCB data to come in, but our folks are not sure that will necessarily solve the problem and waiting to see may not be the best answer.

I have heard that Foth, the sampling team at the Fox, has done a fine job out there. From what I have heard they were originally the sampling oversight contractor , and were given an opportunity to come off the bench and sample after a subpar performance by the sampling contractor they were overseeing . Seems like the competition led to some innovation and now Foth has the job and perhaps a few tricks up its sleeve that enable them to get high recovery cores .

Are you guys thinking about bringing them or someone else off the bench to see whether the performance can be improved out there?

Thanks

Doug

----- Forwarded by Doug Garbarini/R2/USEPA/US on 10/08/2010 02:40 PM -----

From: Benny Conetta/R2/USEPA/US
To: Doug Garbarini/R2/USEPA/US@EPA
Date: 10/07/2010 12:05 PM
Subject: Fw: thoughts on coring program

fyi

----- Forwarded by Benny Conetta/R2/USEPA/US on 10/07/2010 12:05 PM -----

From: Gary Klawinski/R2/USEPA/US
To: King.David@epamail.epa.gov
Cc: USACE_HRFO@roadrunner.com, Conetta.Benny@epamail.epa.gov
Date: 10/07/2010 10:20 AM
Subject: Fw: thoughts on coring program

fyi

----- Forwarded by Gary Klawinski/R2/USEPA/US on 10/07/2010 10:00 AM -----

From: Gary Klawinski/R2/USEPA/US
To: bob.gibson@corporate.ge.com
Date: 10/07/2010 09:17 AM
Subject: thoughts on coring program

Bob,

I wanted to share some thoughts we have on the coring program.

In reviewing the use of the core catchers, we have observed that the stiff plastic core catcher that was used during the first week was not the proper inner diameter and was too stiff for the majority of the type of sediments we are sampling (resulted in no recovery in each of the attempts made) and that the more flexible brass core catcher utilized during the second week was more effective at retaining samples. The brass catcher was used in 24 attempts at 18 different locations and at 11 of those locations the core was retained as the final sample (average recovery of those 11 samples was 99%).

While we are pleased with the results of the brass core catcher, it is troubling that the sampling crew was not using them during the first week (catcher was not available on-site) and the third week (I think the sampling crew decided on their own not to use them). By not using the core catchers in at least one attempt at each location, it is more difficult to determine why our recovery was reduced. As we know there are only three ways recovery is reduced: by loss of sediment out the bottom of the barrel, sediment not entering the barrel due to cobbles, coarse gravel or wood debris (which is present in widespread areas of RS1) and/or compression of sediment in the core barrel. It appears that the sampling crew is once again using a core catcher on one attempt and we understand that the effectiveness of the core catcher depends upon the sediment type being sampled but overall the use of them at each location allows us to evaluate the loss of recovery. Also, I know there are other types of core catchers available made from plastic with different shapes and thickness/resistance. Other types of core catchers should be evaluated during this program. On Fox River and Buffalo River they have been using plastic core catchers.

A key consideration when deciding which core catcher design to use should be a catcher that has the least resistance when sediment enters the barrel but still allows the catcher to retain the material during extraction. This requires the core crew (or someone supervising the crew) to adapt the approach/equipment, as needed, to get the best recovery (we expect some learning by experience). Additionally, good documentation of each core attempt provides the foundation to learn the best approach given the conditions (i.e., what works and does not work). I have provided you the data list EPA believes should be collected for each attempt. We have discussed implementation of systematic approach to data collection and sharing of this information. The approach of the first core attempt without a catcher, the second with a catcher, and the third attempt determined by the professional experience of the core crew whom understand the best approach for getting the best recovery (third attempt would be the time to try other core catchers).

I thought this approach was agreed upon but does not appear to be implemented consistently.

Overall, we are finding that the results of the sampling conducted over the last three weeks are not producing results better than the past SSAP sampling efforts, something that I feel we both expected and a central point of this re-sampling effort and the Peer Review Panel's recommendation. Please see the table below.

Week	# of Locations Processed	2010 SEDC	SSAP	Average R
		# of Processed Samples ³ 80%	# of Co-located Samples ³ 80%	
9/15 – 9/17	16	9	11	
9/20 – 9/24	30	17	15	
9/27 – 10/1	28	6	10	
Total	74	32	36	

I understand that there is also the PCB data to consider. However, one key aspect to confirming the DoC is a high recovery percentage—higher recovery provides for less uncertainty when defining the DoC. I'm not sure the assumption that the loss of recovery is from sediment falling from the bottom of the core is correct. Unless we get better recovery with good elevation control, we will not be able to improve the DoC estimates or confirm the previously defined DoC.

Regarding the sonic rig—we do not consider the attempts made so far as being useful. My thoughts on the sonic rig were that the rig would need to be set up to handle a deeper core with minimal disturbance prior to capping the end (we understand you are changing rigs to one that can raise up a 10 ft. barrel), a core barrel that minimizes the loss of suction from the top of the barrel to help retain the sediment in the core (we are anticipating the use of a good quality, working check valve), and a cutting head that has an inner diameter close to that of the inner diameter of the barrel so that the core sediment is snug in the barrel thereby limiting the potential for sediment to fall out. Our hope is that the sonic rig can sample through sediment intermixed wood debris and reach the native sediments. If the sonic rig does not turn out to be useful, we suggest consideration of a larger P-5 vibracorer pushing steel tubes or the use of a geoprobe rig. I will pass along other information from other projects that I think may be helpful. We would welcome discussion on other approaches.

We understand that adjustments to the optimum combination of equipment and techniques is still on-going and it may take longer to refine that process but I would caution that we have less than

6 weeks left, so we are already a third of the way through the program with minimal success. We anticipate that the addition of more vibracore rigs will include the necessary adjustments to improve recoveries and achieve good elevation control.

If we expect to get better results, we need to continue to evaluate methods outside of those we are currently using. As we have discussed, other major sites like the Fox River have had success at adapting their sampling strategy to include multiple methods and techniques to overcome/improve on similar recoveries issues we are having.

I am available to discuss as needed.

Thanks,

Gary